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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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KYOUNG SUB KIM

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10/20/2004

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EXAMINER

QI, ZHI QIANG


ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/394,379	Applicant(s) KIM, KYOUNG SUB	
	Examiner Mike Qi	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-26, 29 and 32 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-8, 10-23, 25 and 26 is/are allowed.
6) ☒ Claim(s) 24, 29 and 32 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of US 5,739,880 (Suzuki et al) and US 6,504,589 (Kashima et al).

Claim 24, AAPA discloses (page 2, line 24 – page 4, line 20; Figs.1-2 of the specification) a liquid crystal display device having light source (20) and comprising:

- a first substrate (4);
- a second substrate (6) having first and second surfaces (upper and lower surfaces), wherein the first surface (upper surface) is disposed against the first substrate (4);
- a black pattern (24) (non-transparent film) is printed on the left edge of the protective sheet (10a) and it is on the lower surface of the second substrate (6);
- a sheet material (10) disposed between the light source (20) and the second substrate (6).

AAPA does not expressly disclose a non-transparent film coated on a periphery

of the second surface (lower surface) of the second substrate, and the sheet material comprising an uppermost sub-layer having a first length and at least one underlying sub-layer arranged under the uppermost sub-layer and having a second length, and the first length is substantially equal to the second length.

However, Suzuki discloses (col.12, line 28 – col.15, line 51; Figs.2-9) that a liquid crystal display device having a shield tape (TAPE) is stuck to the lower face of the lower substrate (SUB1) at the portion where the seal member (SL) and the black matrix (BM) are not overlapped, and the shield tape (TAPE) is preferable black, and the shielding means is a shielding coating film, so as to prevent the leakage of the back light (BLL). The shield tape (TAPE) is along the seal member (SL) (see Figs. 2 and 9), such that the shield tape (TAPE) is coated on the periphery of the lower face of the lower substrate to block the light emitted from the light source.

Suzuki indicates (col.15, lines 3-11) that the shield tape (TAPE) is stuck to the outside of the substrate (SUB1), and the light (BLL) emitted from the back light is interrupted at the portion other than the display region by the black matrix (BM) and the shield tape (TAPE), so that a color liquid crystal display element having an excellent display quality.

Still lacking limitation is such that the sheet material layers have equal lengths.

However, Kashima discloses (col.1, lines 21-67; Fig.11) that a typical structure of a conventional backlight system and an LCD device in which using diffusion sheet (25) to diffuse the light emitted from the light guide (22) and using prism sheet (26) to converge the light emitted from the light guide (22), and the diffusion sheet (25), the

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prism sheet (26) having equal lengths (Fig.11 shows the diffusion sheet 25 and the prism sheet 26 having equal length). Because the light emitted from the light guide is diffused by the diffusion sheet, and is converged by the prism sheet to enter the liquid crystal cell, so that the luminance would be enhanced and the viewing angle would be enlarged. Conventionally, using a protection sheet to protect the underlying sheet from the dust or scratches.

The evidentiary support is that Kashima discloses (col.1, lines 20-33; Fig.11) that the structure having diffusion sheet and prism sheet (having equal length) is a typical conventional backlight system structure. According to the Merriam Webster's Collegiate Dictionary, conventional means of traditional design. Therefore, the conventional structure disclosed by Kashima such as Fig.11 shows the sheet material having equal length that is a traditional design and that would have been at least obvious.

Since using equal lengths for the protection sheet, prism sheet and the diffusion sheet would be easy to manufacture and would have sufficient luminance in a high efficiency, because the light is diffused by the diffusion sheet and is converged by the prism sheet to enter the liquid crystal cell, and that is a general available knowledge.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use a non-transparent black film coated on a periphery of the lower surface of the lower substrate and to use equal lengths for the protection sheet, prism sheet and diffusion sheet as claimed in claims 24 for preventing the light leakage from the back light and achieving an excellent display quality and obtaining sufficient luminance in a high efficiency.

Claim 29, AAPA discloses (Fig.1) that one edge of the sheet material (10) is adjacent to the light source such as the left edge.

3. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of US 6,313,891 (Nagakubo et al).

Claim 32, AAPA discloses (page 2, line 24 – page 4, line 20; Figs.1-2 of the specification) a liquid crystal display device having light source (20) and comprising:

- a lamp (20);
- a light guide (12);
- a lamp housing (22) surrounding the lamp and arranged on a portion of the light guide;
- a first substrate (4) over the light guide;
- a second substrate (6) between the light guide (12) and the first substrate (4);
- a sheet material (10) between the light guide (12) and the second substrate (6), and the sheet material (10) having uppermost sub-layer such as protective layer (10a).

AAPA does not explicitly discloses that the uppermost sub-layer is set apart from the lamp housing.

However, Nagakubo discloses (col.1, lines 13 – 33; Fig.11) that a conventional ordinary liquid crystal display device is arranged such that successively laminated on the back surface of a liquid crystal panel (31) are a protection/diffusion sheet (32), lens sheets (33), and the uppermost sub-layer is the protection/diffusion sheet (32) which is set apart from the lamp holder (37) (lamp housing) for improving the brightness of light

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(Fig.11 shows the sheet material such as protection/diffusion sheet, lens sheet that is set apart from the lamp housing). According to the general available knowledge, it was common and known in the art that the lamp housing generates heat so that the uppermost sub-layer is set apart from the lamp housing would obtain more protection. According to the Merriam Webster's Collegiate Dictionary, conventional means of traditional design. Therefore, the conventional structure disclosed by Nagakubo such as Fig.11 shows the sheet material such as protection/diffusion sheet, lens sheet being set apart from the lamp housing that is a traditional design and that would have been at least obvious.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange the uppermost sub-layer apart from the lamp housing as claimed in claim 32 for achieving more protection and improving the brightness of light.

Allowable Subject Matter

4. Claims 1-8,10-23, 25 and 26 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither discloses nor teaches a liquid crystal display device comprising various elements as claimed, more specifically, as the following:

a portion of one edge of the sheet material adjacent to the light source is not directly under the non-transparent film or the non-transparent film does not overlap a

portion of one edge of the sheet material adjacent to the light source that is the black film (52) as shown in Fig.3 [claims 1, 15, 25 and 26].

Claims 2-8 and 10-14 are dependent on the claim 1; claims 16-23 are dependent on the claim 15.

The closest references AAPA and US 5,739,880 (Suzuki et al), US 6,147,724 (Yoshii et al) discloses that a liquid crystal display device with back light and light shielding films formed in the peripheral of the LCD and having black film to prevent the back light from leakage, but the prior art of record do not disclose that the edge of the sheet material (protection layer, prism layer, diffusion layer) adjacent to the light source is not directly under or overlap the black film as claimed in the claims 1, 15, 25 and 26 as shown in Fig.3.

Response to Arguments

6. Applicant's arguments filed on Aug.25, 2004 have been fully considered but they are not persuasive.

Applicant's arguments are as follows:

1) The references do not teach or suggest the sheet material having equal length as claimed in the claim 24, and have not any evidentiary support.

2) The references do not teach or suggest the "brightness of light" is improved merely because the protection/diffusion sheet is set apart from the lamp holder as claimed in claim 32.

Examiner's responses to Applicant's arguments are as follows:

1) The reference Kashima discloses (col.1, lines 21-67; Fig.11) that a typical structure of a conventional backlight system and an LCD device in which using diffusion sheet (25) to diffuse the light emitted from the light guide (22) and using prism sheet (26) to converge the light emitted from the light guide (22), and the diffusion sheet (25), the prism sheet (26) having equal lengths (Fig.11 shows the diffusion sheet 25 and the prism sheet 26 having equal length). The evidentiary support is that Kashima discloses (col.1, lines 20-33; Fig.11) that the structure having diffusion sheet and prism sheet (having equal length) is a typical conventional backlight system structure. According to the Merriam Webster's Collegiate Dictionary, conventional means of traditional design. Therefore, the conventional structure disclosed by Kashima such as Fig.11 shows the sheet material having equal length that is a traditional design and that would have been at least obvious.

2) The reference Nagakubo discloses (col.1, lines 13 – 33; Fig.11) that a conventional ordinary liquid crystal display device is arranged such that successively laminated on the back surface of a liquid crystal panel (31) are a protection/diffusion sheet (32), lens sheets (33), and the uppermost sub-layer is the protection/diffusion sheet (32) which is set apart from the lamp holder (37) (lamp housing) for improving the brightness of light (Fig.11 shows the sheet material such as protection/diffusion sheet, lens sheet that is set apart from the lamp housing). According to the Merriam Webster's Collegiate Dictionary, conventional means of traditional design. Therefore, the conventional structure disclosed by Nagakubo such as Fig.11 shows the sheet material

such as protection/diffusion sheet, lens sheet being set apart from the lamp housing that is a traditional design and that would have been at least obvious.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299. The examiner can normally be reached on M-T 8:00 am-5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi
October 14, 2004



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER